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Technology in focus

Intake Manifolds

The primary task of the intake manifold is to **evenly distribute combustion air to the engine**, via each of the intake ports in the cylinder heads. This even distribution plays a vital role in **optimising the efficiency and performance** of the engine.

Functions

Downward movement of pistons and the restriction caused by the throttle valves, creates a partial vacuum in the intake manifold. This vacuum can be used to **drive other systems** such as power assisted brakes, emission control devices and comfort devices such as central locking. The vacuum is also used to **draw out any blow-by gases from the engine's crankcase**. This is known as a **positive crankcase ventilation system**. Through this method these blow-by gases are burned with the fuel/air mixture.

Intake manifold systems always comprise of the **intake manifold** and an **air filter**. Depending on the design and construction, additional components may include:

- A **throttle body** or **preliminary throttle**
- An **air flow sensor** and/or a **pressure and temperature (TMAP) sensor**
- An **inlet for blow-by gases** and any necessary **connector lines**
- An **electronic drive module (EDM),** which can operate the flaps inside certain intake manifolds, **controlling the flow of air into the engine**

Troubleshooting and Diagnostics

Complaints that may be associated with intake manifolds:

- Inadequate engine power
- Opel/Vauxhall fault code P1109 ‘swirl actuator malfunction’

- These faults are often incorrectly attributed to a faulty EDM, whereas they are often caused by **‘sticking’ tumble flaps**, the flaps inside the manifold which control airflow through it

- Sticking tumble flaps may be caused by **dirty combustion air**, **engine management faults**, **incorrect engine controller software** and **malfunctions in the crankcase vent** – these elements should therefore be carefully checked

Links

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Part Info

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Range Coverage

Pierburg is one of the **top European suppliers** of intake manifolds with units being installed in many premium vehicles.

For more information visit the Part Info website or speak to your local motor factor…